State of Utah

Department of
Natural Resources

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April 20, 2004

CERTIFIED RETURN RECEIPT
7099 3400 0016 8896 0211

Mr. Jack Savage
Rawhide Mining LC
5615 North 6300 West
Morgan, Utah 84050

Subject: Initial Review of Notice of Intention to Commence Large Mining Operations, Rawhide Mining LC, Rawhide Mine, M/047/076, Uintah County, Utah

Dear Mr. Savage:

The Division has completed our review of your Notice of Intention to Commence Large Mining Operations for the Rawhide Mine, located in Uintah County, Utah, which was received February 26, 2004. After reviewing the information, the Division has the following comments which will need to be addressed before tentative approval may be granted.

The comments are listed below under the applicable Minerals Rule heading. Please format your response in a similar fashion. **Please address only those items requested in the attached technical review. You may send replacement pages of the original mining notice using redline and strikeout text, so we can see what changes have been made. After the notice is determined technically complete and we are prepared to issue final approval, we will ask that you send us two copies of the complete and corrected plan. Upon final approval of the permit, we will return one copy stamped "approved" for your records.** Please provide a response to this review by June 1, 2004.

On March 2, 2004, the Division forwarded a copy of your Notice of Intention to the Division of Water Quality and requested their comments. We have yet to hear from them, so although we have attempted to make our review as complete as possible, there will probably be additional issues raised once Water Quality has completed its review.

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The Division will suspend further review of the Notice of Intention until your response to this letter is received. If you have any questions in this regard please contact me, Tom Munson, Paul Baker or Doug Jensen of the Minerals Staff. If you wish to arrange a meeting to sit down and discuss this review, please contact us at your earliest convenience. Thank you for your cooperation in completing this permitting action.

Sincerely,

D. Wayne Hedberg

D. Wayne Hedberg
Permit Supervisor
Minerals Regulatory Program

jb
Attachment: Review
cc: John Blake, SITLA
O:\M047-Uintah\S0470076-Rawhide\final\rev1-04202004.doc

REVIEW OF NOTICE OF INTENTION TO COMMENCE LARGE MINING OPERATIONS

Rawhide Mining LC
Rawhide Mine
M/047/076

R647-4-105 - Maps, Drawings & Photographs

105.1 Surface facilities map

Appendix 4, Surface Facilities Map, contained in the application is not at a large enough scale to be able to discern facilities dimensions. A surface facilities map of a scale of 1"= 100' feet or larger is needed for bonding purposes. Include a notation of material used in the construction and eave height of each of the facilities on site. Drawings should include the crusher site, processing facility, bins, silo, 300,000-gallon tank, office and any other buildings contemplated onsite. A description of the thickness and reinforcement of any concrete for each facility should also be included. A drawing of the oil tank corridor, 1"=100' scale, and the power sub-station should also be included. (DJ)

The map legend lists acres of disturbance for features to be located at the site. Please indicate the location of these areas on the surface facilities map. (DJ)

A scaled drawing of a typical section of conveyor BC1 showing supports and foundations (if required) is needed. Similar drawings of conveyors BC2, BC3, & BC4 should be included. The scale of these drawings should be a minimum of 1"=100'. (DJ)

Maps indicate that there are no structures at the mine portal area; is this correct? (DJ)

The total acreage to be disturbed needs to be included in this permit application and an outline of this area shown on the maps. (DJ)

The colors used to identify mine features in the legend do not correctly identify them as they appear on the map. Please correct this oversight. The legend is also incorrect on the property map. (DJ)

The surface facilities map indicates that additional areas outside the spent shale storage area will be used for topsoil storage. These additional areas need to be included in the total disturbed areas at the site. (DJ)

A retention pond is proposed to be located on the site. Please include a detailed drawing and cross-sections of this feature. Please show the location of the borrow

area for the material used to construct this feature. Reclamation of this borrow area should be included in the surety estimate. (DJ)

The map does not show any internal power lines servicing the facilities on site. Will overland power lines be constructed on-site? If so, please show the location of these features on the surface facilities map and include the cost of removal in the reclamation surety. (DJ)

The map does not show any roads servicing the crusher and process facility; will roads be built to access these areas? If roads are to be built, please show the locations and include the cost of reclamation in the surety. (DJ)

None of the maps show the belt system that will deliver spent shale to the disposal area. Also the belt system used to transport the crushed ore to and from the dead storage area is not shown. Please show these items on the surface facilities map and indicate whether these belt systems will be fixed or portable. Costs for the removal of these features should be included in the surety estimate. (DJ)

A detailed drawing of the area of the portal and two storage areas, 1"=100', and a reclamation plan of these features should be included. (DJ)

The total disturbed area for the site is noted as 121.5 acres. The areas listed total 121 acres; where is the additional .5 acres of disturbance? Please show an outline of these proposed disturbances on the maps included in the application. (DJ)

The spent shale area has various shading and cross-hatching covering the surface area. Please include in the legend the significance of these features. (DJ)

The surface facilities map does not have a scale. Please include a scale for this map. (DJ)

The bar scale shown on the property map does not correctly indicate the scale of the map. Please include a bar scale correctly indicating the scale of this map. (DJ)

Detailed plans and engineering designs of water impounding structures with embankments greater than 20 feet in height from the upstream toe of the embankment or greater than 20 acre-feet in storage capacity will need to be provided as part of the plan. Sediment ponds, diversion channels, culvert sizes and locations, and other hydrologic designs and features to be incorporated into the mining and reclamation plan will be provided as part of the plan. (TM)

Maps and drawings of geologic formations and structure have been provided but with no legends or explanation in regards to water bearing structures and ground water contours. This will be required for determination of existing ground water conditions, impacts during operations, reclamation, and postmining land uses related to ground water. Drill holes should be used to supplement existing data, and the following informational data will need to be collected if drill holes are the only means of collecting this data:

1. Aquifer tapped.
2. Aquifer hydrologic characteristics.
3. Lithologic and geophysical logs.
4. Well depth, size, type of casing or finish, location , and type of perforations.
5. Elevation of land surface and measuring point.
6. Diagram and photograph of well showing access to well and measuring point.
7. Date the well was drilled.
8. Well-response data for unpumped well (specify capacity tests).
9. Local well name and owner.
10. Location by legal description, such as latitude and longitude coordinates.
11. Significant features near the well that could affect the water level. (TM)

Pits, ponds, streams, etc., can also be used as an indication of ground water levels in the immediate vicinity. If these surface water sources are to be used as indicators of ground water levels, care must be taken to determine what aquifer is in contact with them. Water quality determinations are not representative of ground water from these sources due to surface water contamination. (TM)

105.2 Additional Drawings or Cross Sections (slopes, roads, pads, etc.)

Please include scaled cross-sections of the reclamation on the spent shale storage pile. The Division requests one north-south and one east-west section showing storage pile contours before recontouring and after final recontouring. (DJ)

Appendix 5, the Underground Panel Layout Map, indicates that one of the mining panels will run beneath a portion of the double power line crossing the property. Because the proposed mining will result in subsidence of this area, line items should be included in the surety estimate for the relocation of this power line to an area that will not be impacted by the subsidence. (DJ)

A letter should be included in the application indicating that a relocation of these power lines will be acceptable to the owners of these lines. (DJ)

Because subsidence has been predicted in all areas under which mining will occur, all the areas impacted by subsidence should be included as affected area and potentially disturbed area part of the application. Areas that will be affected by the subsidence should be included in the total disturbance at the site. Potential impacts to surface structures and facilities will need to be included in the surety. (DJ)

Letters from adjacent land owners, which will be impacted by projected surface subsidence, approving these impacts to their property, should be included in the application. (DJ)

R647-4-106 - Operation Plan

106.2 Type of operations conducted, mining method, processing etc.
The plan states that an EPA permit for gas emissions will be required for the processing plant. Please include a copy of this permit in the plan. (DJ)
Will a similar permit from the Utah Division of Air Quality also be required for the processing plant? (DJ)

106.3 Estimated acreages disturbed, reclaimed, annually.
The acreage figures shown do not appear to include the disturbed area for the portal, the fan, and the storage and conveyor facilities. Please include this in the estimated acreage list or show where it has already been included. (PBB)

The currently permitted pilot plant is within two miles of the proposed operations, and the Division's practice based on rule R647-1-106 (definition of "on-site") is to include in one permit all facilities within a two-mile radius. Please include in the application either, 1) justification for keeping the pilot plant as an operation permitted separately from the proposed mine, or 2) all the necessary information for permitting this area as part of the proposed mine, including the acreage for this area, a reclamation plan and bonding. (PBB)

106.5 Existing soil types, location, amount
The plan includes information from the soil surveys that satisfies the requirements of this regulation, but there is a slight error in one of the calculations that needs to be corrected. This section of the plan says an average of 12 inches of Walknolls soil and 50 inches of Gilston soil will be salvaged for an average of 887 and 2315 cubic yards per acre respectively. These figures of 887 and 2315 cubic yards are based on 55 percent coverage for the Walknolls soil and 35 percent coverage for the Gilston soil,

so the total amount of soil to be salvaged from one acre would be 3202 cubic yards. (PBB)

In the previous paragraph, the figure for the Gilston soil appears to be slightly off. The Division calculates that it should be 2353 cubic yards and that the total should be 3240 cubic yards. Although this difference is not great, it is enough to cause some confusion about how the figures were derived. However, the Division is requiring that the amount of soil to be salvaged be reduced (see below), so the figures will change altogether. (PBB)

106.6 Plan for protecting & redepositing soils

The operator intends to salvage the Gilston soil to a depth of 50 inches and the Walknolls soil to a depth of 12 inches. The Gilston soil is very deep, but according to the soil survey, it has some very severe limitations below 52 inches. The pH is very high, and it also has high sodium and salt concentrations below this depth. Because horizon depths vary across the landscape, there are almost certainly places where these limiting factors are more or less shallow than shown in the survey. For this reason, unless the operator is able to more closely define the depths of suitable soil material, less soil should be salvaged. The Division recommends reducing the depth of salvage to about 40 inches to give more confidence that the unsuitable soils are not included. (PBB)

The only limitation on the Walknolls soil is the depth. The survey shows it being 16 inches deep to bedrock, so the salvage depth shown in the plan, 12 inches, should be about what can actually be saved. (PBB)

According to the plan, the total volume of soil to be stockpiled and used for reclamation is 3202 cubic yards per acre, slightly different from the figure of 3240 cubic yards the Division calculates. However, if the amount of Gilston soil to be salvaged is reduced to 40 inches, the amount per acre drops to 2770 cubic yards or about 21 inches. (PBB)

The plan says topsoil will be pushed out of the way of the spent shale and stockpiled for reclamation purposes. At the time of reclamation, topsoil will be replaced to a depth of 12-14 inches. Based on the current plan, the Division calculates there would be an average of 24 inches of soil available for reclamation. This discrepancy needs to be resolved or explained. If the depth of soil salvage for areas with Gilston soils were reduced to 40 inches, the average replacement depth, as discussed above, would be about 21 inches. (PBB)

The plan says soil will be salvaged from areas where spent shale and reject materials are placed but says nothing about other areas. *Soil needs to be salvaged from all disturbed areas where suitable soil is available and can reasonably be salvaged*, so this statement in the plan needs to be corrected. (PBB)

The plan needs some discussion about soil salvage in the portal, fan, conveyor, and storage areas. The soils in this area are in the Badlands—Walknolls—Rock Outcrop Complex. The Division anticipates that soil salvage will be difficult or impossible in some of this area, but there are some places near the storage areas, the fan, and the portal, where deeper soils may be available. (PBB)

Salvaged soil needs to be protected from erosion and weeds, and the best way to do this is to seed it. The plan should include a commitment to seed the soil stockpiles with a semi-permanent seed mix in the first fall following stockpiling. The plan should contain a seed mix for interim revegetation. If soil needs to be stockpiled much before the fall, it may be desirable to plant with an annual grain, such as barley. (PBB)

Section 107 of the plan says soils will be protected on a temporary basis using soil fences. Please clarify the term "soil fences." Does this refer to a geotextile sediment control fence for limiting movement of water-born sediment? Or is it like a snow fence meant to limit wind erosion? In either case, it may be best to use this sort of erosion control in combination with a tacked mulch and an annual grain. (PBB)

The Division needs some information about the chemical and physical nature of the spent shale, particularly if only about a foot of soil is placed over the shale. Even if there is two feet of soil, the soil depth will probably be a limiting factor in plant growth. The Division assumes data is available showing whether there might be toxicity problems with things like boron or selenium. If there might be toxicity problems, the plan should include test results showing whether this is the case. In addition, the plan should include basic information like paste pH, electrical conductivity, and sodium adsorption ratio. Also needed is an indication of how the shale decomposes. Does it quickly turn to clay and inhibit root or water penetration? (PBB)

106.7 Existing vegetation - species and amount

Information in this section of the plan is adequate. (PBB)

106.8 Depth to groundwater, extent of overburden, geology

Only one comment was made in the plan regarding ground water, and this was that the White River was 500 feet below the portal. The significance of this statement is uncertain. Please explain how this gives the Division detailed information about the ground water in the area. The Division would like to know a lot more about the piezometric surface of ground water in the area and the exact location in relation to the mine area. In addition, it is essential that the Division have an accurate accounting of ground water found in aquifers, springs, and wells before the plan will be considered complete. (TM)

106.9 Location & size of ore, waste, tailings, ponds

The plan says the spent shale will be dozed to conform to the existing topography. Because a portion of the spent ore pile will be located in an area not affected by subsidence, is any recontouring of surrounding areas of the spent shale pile after subsidence contemplated? (DJ)

R647-4-107 - Operation Practices

107.1 Public safety & welfare

This section of the plan includes some comments about disposing of spent shale in pre-law, unpermitted Gilsonite trenches. The Division contacted a representative of American Gilsonite about this possibility, and they were positive about the concept. Although there are still some Gilsonite reserves, there is probably not enough to justify the cost to permit these areas and reclaim them. The Division encourages the operator to pursue this option by contacting American Gilsonite. Although these abandoned trenches would need to be included in the permit area, there would be no topsoil salvage or revegetation requirement except, potentially, for access roads or other facilities constructed in presently undisturbed areas. Some bonding could be required, particularly for previously undisturbed areas, but the reclamation liability for disposing of spent shale in this manner is likely to be significantly less than for placing it in a refuse pile. (PBB)

The Division also encourages Rawhide to contact any other land owners that may be impacted by this dumping. Approval of this activity by all affected landowners needs to be acquired and included in the plan before dumping into the open trenches is initiated. There could also be ground water concerns that would need to be addressed. (DJ)

107.1.11 Closing or guarding shafts & tunnels
A plan for the closure and reclamation of the portals needs to be included in the plan and the cost of this activity included in the surety. (DJ)

107.1.12 Disposal of trash, scrap, debris
A plan for the disposal of building debris during reclamation should be included. (DJ)

107.1.13 Plugging or capping drill holes
Please provide the necessary commitment to cap or appropriately plug all drill holes. (TM)

107.1.14 Posting warning signs
Warning signs should be placed around the site warning the public of the site-specific mining-related hazards. (DJ)

The plan says, " all excavations requiring fences and barriers will be constructed." Please provide an estimate of the number and size of these features for bonding purposes. (DJ)

107.1.15 Constructing berms, fences, etc. above highwalls
According to the plan, the site is located in an active grazing area; will any fences be constructed to isolate the site from these impacts? (DJ)

107.2 Erosion control & sediment control
The plan needs to adequately discuss the detailed design plan for all surface water controls to contain and control stormwater leaving the site. It needs to have adequate details of the pond design and site contours to show that stormwater will be contained and treated. (TM)

R647-4-108 - Hole Plugging Requirements
See comment under R647-4-107.1.13

R647-4-109 - Impact Assessment

109.1 Impacts to surface & groundwater systems
A copy of the EPA point discharge permit for the projected storage and sedimentation pond should be included in the plan. (DJ)

The plan states that any water encountered in the underground workings will be pumped to the retention pond. Please state the quality of the water from the underground operations that will be placed in this pond. What contingencies are proposed if large volumes of water are intercepted that might exceed pond volume? (DJ)

The necessary geologic information must accompany this application to describe the underground aquifers impacted by this operation. See description of monitoring and ground water documenting requirements in R647-4-105.(TM)

109.2 Impacts to threatened & endangered wildlife/habitat

The Fish and Wildlife Service has determined that any water consumption in the upper Colorado River drainage adversely affects four endangered fish, the humpback chub, the Colorado pikeminnow, the razorback sucker, and the bonytail chub. Mitigation for impacts from much of this water consumption is covered in existing agreements. (PBB)

The plan needs to discuss how much water would be used by the mine or disrupted by the mine and how this might affect the amount of water reaching surface drainages, such as the White River. For example, the sediment pond will capture some quantity of water that would otherwise be expected to go to the river. Mining could also affect seeps or springs; how might this affect the amount of water in the river? Depending on the amount of water that might be lost from surface flows, mitigation may or may not be required. (PBB)

109.4 Slope stability, erosion control, air quality, safety

An air quality permit may be required for the crusher located on site. The Division of Air Quality should be contacted. If this site is considered to be exempt, the letter stating this should be included in the plan. If a permit is required, please include a copy of the permit in the plan. (DJ)

A copy of the EPA permit to discharge gases from the processing plant should be included in the plan. (DJ)

R647-4-110 - Reclamation Plan

110.2 Roads, highwalls, slopes, drainages, pits, etc., reclaimed

See comments in Section 106.6 about soil salvaging requirements and about soil replacement depth. (PBB)

The road leading to the portal will be reclaimed by ripping and shaping it and adding topsoil *if necessary* (emphasis added). The road would also be disk harrowed and seeded. If topsoil was salvaged from the road areas, it also needs to be replaced. (PBB)

The plan states that the main road will be upgraded for use during operations and left in place after closure. If the upgrades to the main road result in widening this feature, reclamation of the widened portion of the road will be necessary. If the road is to be paved, removal of the paving material will be necessary. (DJ)

If placement of gravel on the second road is necessary, a surety amount should be included that will be sufficient for the removal of the gravel before ripping and seeding. Or allow for sufficient soil to be placed over the gravel to assure revegetation success. (DJ)

110.3 Description of facilities to be left (post mining use)

A letter from the land-owner authorizing Rawhide to leave the retention pond should be included in the plan. If this letter is not available, a line item in the reclamation surety for the removal of this feature will be necessary. (DJ)

110.4 Description or treatment/disposition of deleterious or acid forming material

Permission for burying foundation material on-site should be approved by the landowner. An approval letter from the Division of Environmental Quality, Solid and Hazardous Waste Division, allowing this activity should be included. If the permission is not granted, bonding for the removal of the foundations from the site will be necessary. (DJ)

110.5 Revegetation planting program

The plan says seedbed preparation will consist of ripping the area on the contours, but the way this section is organized and worded, it sounds like this commitment only applies to the shale disposal area. The Division anticipates ripping will be necessary in the entire surface facilities area during reclamation, and the plan should be modified to make this clear. It should also contain some detail about the depth of ripping and the spacing of ripper bars. Roads and other heavily compacted areas need to be ripped a minimum of two to three feet deep. The shale disposal area should be ripped about two feet deep to allow limited mixing of spent shale and soil. (PBB)

The plan states that a fence could be erected to protect the seedlings from livestock grazing. Please show the approximate location and total area to be surrounded by this

fence. Removal of this fence upon closure should be included in the surety calculations. (DJ)

According to the plan, seeds will be planted with drill seeding equipment, but some species will be broadcast seeded. Drilling tends to reduce roughness which is critical in arid areas. The Division recommends that slopes steeper than about 3h:1v be left as rough as possible and broadcast seeded almost immediately after being ripped. Flatter areas could be drilled as discussed in the plan which includes broadcasting some species. (PBB)

There is a comment that Wyoming big sage and bottlebrush squirreltail could be added to the seed mix if they are available. These species are both common in the area, and they are normally available commercially. Squirreltail in particular does very well in reclamation settings. Both of these species should be included in the mix. (PBB)

R647-4-111 - Reclamation Practices

111.1 Public safety & welfare

1.11 Sealing shafts & tunnels
See comment under R647-4-107.1.11

1.12 Disposal of trash & debris
See comment under R647-4-107.1.12

1.13 Posting warning signs
See comment under R647-4-107.1.14

1.14 Constructing berms/fences above highwalls
See comment under R647-4-107.1.15

111.2 Reclamation of natural channels

Drainages - If natural channels have been affected by mining operations, then reclamation must be performed such that the channels will be left in a stable condition with respect to actual and reasonably expected water flows so as to avoid or minimize future damage to the hydrologic system. (TM)

No engineering design plans have been provided to describe reclamation of channels or designs for reclaimed channels. This will need to include expected flows based on

watershed area calculations, dimensions of designed channels, including protection such as riprap and the size of riprap. Please provide this information. (TM)

111.3 Erosion & sediment control

Erosion Control - Reclamation shall be conducted in a manner such that sediment from disturbed areas is adequately controlled. The degree of erosion control shall be appropriate for the site-specific and regional conditions of topography, soil, drainage, water quality or other characteristics. (TM)

The plan fails to discuss in any detail erosion and sediment control during reclamation. The plan needs to adequately discuss the detailed design plan for all surface water controls to contain and control stormwater leaving the site. Please provide engineering design information showing how the site will be contoured and how runoff will be treated to control offsite sedimentation. (TM)

111.8 All roads & pads reclaimed

All areas affected by this operation should be reclaimed at the closure of this site, unless a variance is approved to allow some features to remain. (DJ)

111.9 Dams & impoundments left self draining & stable

Dams and Impoundments - Water impounding structures shall be reclaimed so as to be self-draining and mechanically stable unless shown to have sound hydrologic design and to be beneficial to the postmining land use. The plan needs to discuss the final disposition of the sediment pond. All areas affected by this operation should be reclaimed at the closure of this site, unless a variance is approved to allow some features to remain based on the criteria above. (TM)

111.11 Structures & equipment buried or removed

All debris from reclaimed structures at the site should be removed unless permission is obtained from the landowner for any on-site burial. (DJ)

R647-4-113 - Surety

Surety calculations for the reclamation of this proposed site should be included in the plan. Also the reclamation surety for the pilot plant should be included as a part of the final reclamation surety estimate. (DJ)

R647-4-115 - Confidential Information

No confidential information was noted in this plan.